

## DECLARATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

### MODIFICATION OF SURFACES USING BIOLOGICAL RECOGNITION EVENTS

the specification of which (I authorize Choate, Hall & Stewart to check one of the following three choices, and fill in the blanks, if applicable):

\_\_\_\_\_ is attached hereto

was filed on May 19, 1999 as Application Serial No. 09/314,540 and amended on \_\_\_\_\_ (if applicable).

\_\_\_\_\_ was filed as PCT international application No. \_\_\_\_\_, on \_\_\_\_\_ and was amended under PCT Article 19 on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledged the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s): Priority Claimed

(Number)	(Country)	(Day/Month/Year/Filed)	Yes	No
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(Number)	(Country)	(Day/Month/Year/Filed)	Yes	No
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I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(filing date)	(status-patented, pending, abandoned)
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(Application Serial No.)	(filing date)	(status-patented, pending, abandoned)
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PCT Applications designating the United States:

(PCT Appl. No.)	(U.S.S.N.)	(status-patented, pending, abandoned)
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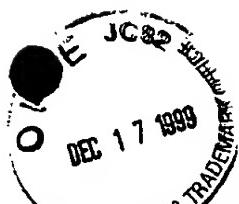
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Provisional Application(s):

Application Number	Filing Date	Status
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Application Number	Filing Date	Status
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United State Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.



Full name of first inventor Robert W. Langer

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 77 Lombard Street, Newton, MA 02158

Citizenship U.S.A.

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

Full name of second inventor Scott M. Cannizzaro

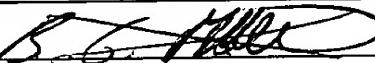
Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 24 Tracey Road, Cotuit, MA

Citizenship U.S.A.

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

Full name of third inventor Bernhard G. Mueller 

Inventor's signature  Date: 12/01/1999

Residence Grienstrasse 41, CH-4055 Basel, Switzerland

Citizenship Switzerland

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

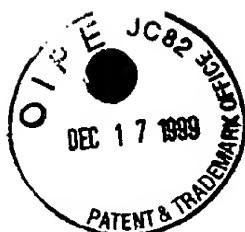
Full name of fourth inventor Kevin Shakesheff

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 44 South Street, Draycott, Derby, United Kingdom

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### MODIFICATION OF SURFACES USING BIOLOGICAL RECOGNITION EVENTS

the specification of which (I authorize Choate, Hall & Stewart to check one of the following, three choices, and fill in the blanks, if applicable):

\_\_\_\_\_ is attached hereto

was filed on May 19, 1999 as Application  
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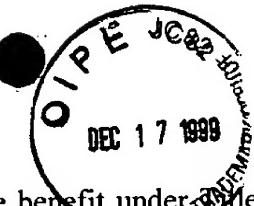
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Prior Foreign Application(s): Priority Claimed

(Number)	(Country)	(Day/Month/Year/Filed)	Yes	No
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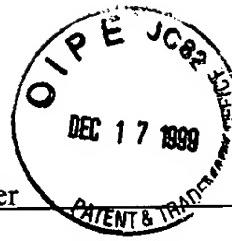
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Full name of first inventor Robert S. Langer

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 77 Lombard Street, Newton, MA 02158

Citizenship U.S.A.

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Full name of second inventor Scott M. Cannizzaro

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

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Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

Full name of third inventor Bernhard G. Mueller

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence Grieustrasse 41, CH-4055 Basel, Switzerland

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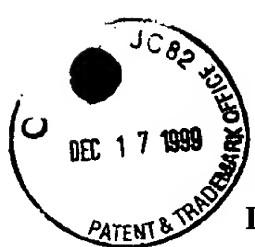
Full name of fourth inventor Kevin Shakesheff

Inventor's signature Kevin Shakesheff Date: 26/11/99

Residence 44 South Street, Draycott, Derby, United Kingdom

Citizenship Switzerland UNITED KINGDOM

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA



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Full name of first inventor Robert S. Langer

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 77 Lombard Street, Newton, MA 02158

Citizenship U.S.A.

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

Full name of second inventor Scott M. Cannizzaro

Inventor's signature Scott M. Cannizzaro Date: Nov. 29 '99

Residence 24 Tracey Road, Cotuit, MA

Citizenship U.S.A.

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

Full name of third inventor Bernhard G. Mueller

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence Grieustrasse 41, CH-4055 Basel, Switzerland

Citizenship Switzerland

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

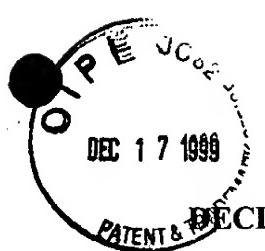
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Full name of first inventor Robert S. Lange

Inventor's signature RSL Date: 12/3/89

Residence 77 Lombard Street, Newton, MA 02158

Citizenship U.S.A.

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

Full name of second inventor Scott M. Cannizzaro

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 24 Tracey Road, Cotuit, MA

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Full name of fourth inventor Kevin Shakesheff

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_

Residence 44 South Street, Draycott, Derby, United Kingdom

Citizenship Switzerland

Post Office Address MIT, Dept. of Chemical Engineering, Room E25-342, Cambridge, MA

DEC 17 1999

ATTORNEY'S DOCKET NO.: 0492611-0335 (MIT 8070)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Langer *et al.*  
Serial Number: 09/314,540  
Filed: May 19, 1999  
For: MODIFICATION OF SURFACES USING BIOLOGICAL  
RECOGNITION EVENTS

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**ESTABLISHING RIGHT OF ASSIGNEE TO TAKE ACTION**  
**(37 CFR 3.73(b))**

The assignee of the entire right, title and interest of inventors the Massachusetts Institute of Technology, hereby seeks to take action in the Patent and Trademark Office in the above matter.

Ownership by the assignee is established as follows:

documents already recorded in the PTO on \_\_\_\_\_.

Reel \_\_\_\_\_ Frame \_\_\_\_\_ ; and

documents separately submitted for recordal to the PTO (a copy of these documents is attached).



**STATEMENT**

I, a person authorized to sign on behalf of the assignee, have reviewed the evidentiary documents referred to above and certify that, to the best of my knowledge and belief, title is mine/ours as assignees who seek to take further action.

Jarmila Z. Hrbek  
Signature of Authorized Person

Name of Authorized Person

**JARMILA Z. HRBEK**  
PATENT ADMINISTRATOR  
AND OFFICE MANAGER  
TECHNOLOGY LICENSING OFFICE

Title of Authorized Person

Exchange 3065308.1



ATTORNEY'S DOCKET NO.: 0492611-0335 (MIT 8070)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Langer, et al.  
Serial Number: 09/314,540  
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Assistant Commissioner for Patents  
Washington, D.C. 20231

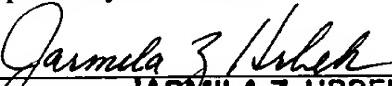
Sir:

APPOINTMENT OF ATTORNEY

The undersigned hereby appoints Brenda Herschbach Jarrell, Registration No. 39,223; Sam Pasternack, Registration No. 29,576; David J. Powsner, Registration No. 31,868; Kevin M. Tormey, Registration No. P-41,351; and Elizabeth Nugent, Registration No. 43,839, as its attorneys and agents for prosecution of matters relating to the above-identified patent application and to conduct all business in the United States Patent and Trademark Office.

All correspondence should be sent to Brenda Herschbach Jarrell, Choate, Hall & Stewart, Exchange Place, 53 State Street, Boston, Massachusetts 02109.

Respectfully submitted,

  
Name: JARMILA Z. HRBEK  
Title: Patent Administrator & Office Manager  
On behalf of Mass. Inst. of Tech.

Dated: Nov 19, 1999



Applicant or Patentee: Langer et al.

Serial or Patent No.: 09/314,540

Attorney's Docket No.: 0492611-0335 (MFB 970)

Filed or Issued: 5/19/99

For: Modification of Surfaces using Biological Recognition Events

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) and 1.27(d)) - NONPROFIT ORGANIZATION**

I hereby declare that I am an official empowered to act on behalf of the nonprofit organization identified below:

NAME OF ORGANIZATION: Massachusetts Institute of Technology

ADDRESS OF ORGANIZATION: 77 Massachusetts Avenue  
Cambridge, MA 02139

**TYPE OF ORGANIZATION**

- (X) UNIVERSITY OR OTHER INSTITUTION OF HIGHER EDUCATION
- ( ) TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE  
(26 USC 501(a) and 501(c) (3))
- ( ) NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF  
STATE OF THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)
- ( ) WOULD QUALIFY AS TAX EXEMPT UNDER INTERNAL REVENUE  
SERVICE CODE (26 USC 501(a) and 501(c) (3)) IF LOCATED IN THE  
UNITED STATES OF AMERICA
- ( ) WOULD QUALIFY AS NONPROFIT SCIENTIFIC OR EDUCATIONAL  
UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA  
IF LOCATED IN THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)

I hereby declare that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.9(e) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code with regard to the invention entitled Modification of Surfaces using Biological Recognition Events by inventor(s) Langer et al. described in

- ( ) the specification filed herewith.
- (x) application serial no. 09/314,540, filed 5/19/99.
- ( ) patent no. \_\_\_\_\_, issued \_\_\_\_\_.

I hereby declare that rights under contract or law have been conveyed to and remain with the nonprofit organization with regard to the above identified invention.

If the rights held by the nonprofit organization are not exclusive, each individual, concern or organization having rights to the invention is listed below\* and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9 (c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under CFR 1.9(e). \*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
( )INDIVIDUAL ( )SMALL BUSINESS CONCERN ( )NONPROFIT ORGANIZATION

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
( )INDIVIDUAL ( )SMALL BUSINESS CONCERN ( )NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Jarmila Z. Hrbek  
TITLE IN ORGANIZATION Patent Administrator and Office Manager,  
Technology Licensing Office  
ADDRESS OF PERSON SIGNING 77 Massachusetts Avenue, Room NE25-230  
Cambridge, MA 02139

SIGNATURE Jarmila Z. Hrbek DATE Nov. 19, 1999

## A S S I G N M E N T

In consideration of One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned **Robert S. Langer** of Newton, MA, **Scott M. Cannizzaro** of Cotuit, MA, **Bernhard G. Mueller** of Basel, Switzerland; and **Kevin Shakesheff** of Draycott, Derby, U.K., hereby

Sell, assign and transfer to the **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**, having a place of business at **77 Massachusetts Avenue, Cambridge, Massachusetts**, its successors, assigns and legal representatives, all hereinafter referred to as the ASSIGNEE, our entire right, title and interest for the United States and all foreign countries, in and to any and all inventions which are disclosed in the application for United States Letters Patent filed **May 19, 1999** Serial No. **09/314,540** entitled "**MODIFICATION OF SURFACES USING BIOLOGICAL RECOGNITION EVENTS**" and in and to our rights in said application and all divisional, continuing, substitute, renewal, reissue and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said inventions; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said inventions including the right to apply for patent rights in each foreign country and all rights to priority.

Agree that said ASSIGNEE may apply for and receive Letters Patent for said inventions in its own name; and when requested, without charge to but at the expense of said ASSIGNEE, agree to carry out in good faith the intent and purpose of this assignment by executing all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said inventions, by executing all rightful oaths, assignments, powers of attorney and other papers, by communicating to said ASSIGNEE all facts known to us relating to said inventions and the history thereof, and generally by doing everything possible which said ASSIGNEE shall consider desirable for aiding in securing and maintaining proper patent protection for said inventions and for vesting title to said inventions and all applications for patents and all patents on said inventions, in said ASSIGNEE.

Hereby request the Honorable Commissioner of Patents and Trademarks to issue said Letters Patent to said ASSIGNEE.

Covenant with said ASSIGNEE that no assignment, grant, mortgage, license or other agreement affecting our rights and property herein conveyed has been made to others by us, and that full right to convey the same as herein expressed is possessed by us.

Dated: \_\_\_\_\_

**Robert S. Langer**

Dated: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

**Scott M. Cannizzaro**

Dated: \_\_\_\_\_

Witnesed by: \_\_\_\_\_

Dated: \_\_\_\_\_

Witnesed by: \_\_\_\_\_

Dated: \_\_\_\_\_

**Bernhard G. Mueller**

Dated: \_\_\_\_\_

Witnesed by: \_\_\_\_\_

Dated: \_\_\_\_\_

Witnesed by: \_\_\_\_\_

Dated: 26/11/99

*Kevin Shakesheff*  
**Kevin Shakesheff**

Dated: 26.11.99

*Reinerson*  
Witnessed by: \_\_\_\_\_

Dated: 26/11/99

*(Signature)*  
Witnessed by: \_\_\_\_\_

A S S I G N M E N T

In consideration of One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned **Robert S. Langer** of Newton, MA, **Scott M. Cannizzaro** of Cotuit, MA, **Bernhard G. Mueller** of Basel, Switzerland; and **Kevin Shakesheff** of Draycott, Derby, U.K., hereby

Sell, assign and transfer to the **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**, having a place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts, its successors, assigns and legal representatives, all hereinafter referred to as the ASSIGNEE, our entire right, title and interest for the United States and all foreign countries, in and to any and all inventions which are disclosed in the application for United States Letters Patent filed **May 19, 1999** Serial No. **09/314,540** entitled "**MODIFICATION OF SURFACES USING BIOLOGICAL RECOGNITION EVENTS**" and in and to our rights in said application and all divisional, continuing, substitute, renewal, reissue and all other applications for Letters Patent which have been or shall be filed in the United States and all foreign countries on any of said inventions; and in and to all original and reissued patents which have been or shall be issued in the United States and all foreign countries on said inventions including the right to apply for patent rights in each foreign country and all rights to priority.

Agree that said ASSIGNEE may apply for and receive Letters Patent for said inventions in its own name; and when requested, without charge to but at the expense of said ASSIGNEE, agree to carry out in good faith the intent and purpose of this assignment by executing all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all said inventions, by executing all rightful oaths, assignments, powers of attorney and other papers, by communicating to said ASSIGNEE all facts known to us relating to said inventions and the history thereof, and generally by doing everything possible which said ASSIGNEE shall consider desirable for aiding in securing and maintaining proper patent protection for said inventions and for vesting title to said inventions and all applications for patents and all patents on said inventions, in said ASSIGNEE.

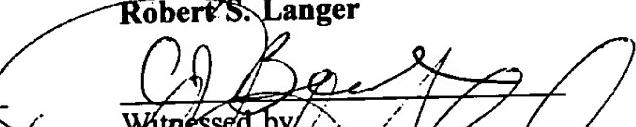
Hereby request the Honorable Commissioner of Patents and Trademarks to issue said Letters Patent to said ASSIGNEE.

Covenant with said ASSIGNEE that no assignment, grant, mortgage, license or other agreement affecting our rights and property herein conveyed has been made to others by us, and that full right to convey the same as herein expressed is possessed by us.

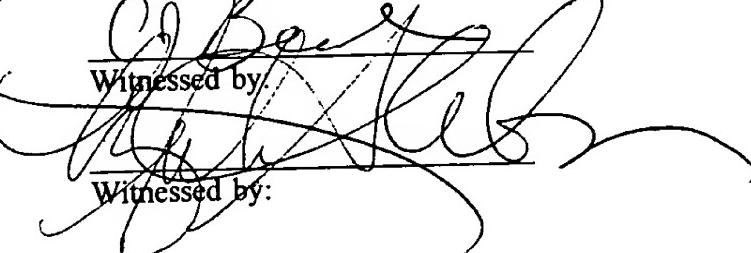
Dated: 12/3/99

  
\_\_\_\_\_  
**Robert S. Langer**

Dated: 12/3/99

  
\_\_\_\_\_  
Witnessed by:

Dated: 12.3.99

  
\_\_\_\_\_  
Witnessed by:

Dated: \_\_\_\_\_ **Scott M. Cannizzaro**

Dated: \_\_\_\_\_ **Witnessed by:**

Dated: \_\_\_\_\_ **Witnessed by:**

Dated: \_\_\_\_\_ **Bernhard G. Mueller**

Dated: \_\_\_\_\_ **Witnessed by:**

Dated: \_\_\_\_\_ **Witnessed by:**

Dated: \_\_\_\_\_ **Kevin Shakesheff**

Dated: \_\_\_\_\_ **Witnessed by:**

Dated: \_\_\_\_\_ **Witnessed by:**

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**Robert S. Langer**

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Witnessed by: \_\_\_\_\_

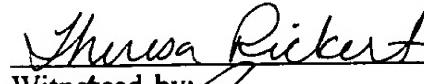
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Witnessed by: \_\_\_\_\_

Dated: Nov. 29, 1999

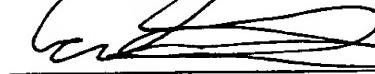
  
Scott M. Cannizzaro

Dated: Nov. 29, 1999

  
Theresa Ricker

Witnessed by:

Dated: Nov. 29 1999

  
Carmichael Roberts

Witnessed by:

Dated: \_\_\_\_\_

**Bernhard G. Mueller**

Dated: \_\_\_\_\_

Witnessed by:

Dated: \_\_\_\_\_

Witnessed by:

Dated: \_\_\_\_\_

**Kevin Shakesheff**

Dated: \_\_\_\_\_

Witnessed by:

Dated: \_\_\_\_\_

Witnessed by:

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Dated: \_\_\_\_\_

**Robert S. Langer**

Dated: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

**Scott M. Cannizzaro**

Dated: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

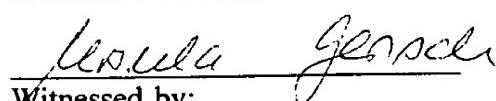
Witnessed by: \_\_\_\_\_

Dated: 12/01/1999



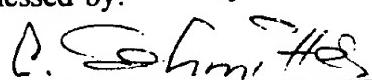
**Bernhard G. Mueller**

Dated: 12/01/1999



Witnessed by: \_\_\_\_\_

Dated: 12/01/1999



Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

**Kevin Shakesheff**

Dated: \_\_\_\_\_

Witnessed by: \_\_\_\_\_

Dated: \_\_\_\_\_

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